

Claims

1. A method of managing a trunk to provide a ring-back sound in a subscriber-based ring-back sound service, the ring-back sound service method including the steps of a) a home location register providing first information indicating whether a ring-back tone preset in the home location register is substituted and second information for performing routing to intelligent peripheral means to a corresponding terminating mobile switching center when a location of a terminating subscriber is registered; b) the terminating mobile switching center providing a ring-back tone to an arbitrary originator or requesting a connection of a trunk call from the intelligent peripheral means according to the first and second information, when the terminating mobile switching center recognizes a call connection request transmitted from the arbitrary originator to the terminating subscriber; c) the intelligent peripheral means searching for a ring-back sound preset with respect to the terminating subscriber after connecting the trunk call in response to the trunk call connection request, and providing the searched ring-back sound to the originator instead of the ring-back tone through the trunk-connected terminating mobile switching center, the trunk management method comprises the steps of:

The terminating mobile switching center requesting a release of the connected trunk call from the intelligent peripheral means when an answer of the terminating subscriber is recognized or when a first predetermined period of time has elapsed from a time when it is recognized that the searched ring-back sound is provided to the originator; and

The intelligent peripheral means requesting a release of the connected trunk call from the terminating mobile switching center when a second predetermined period of time has elapsed from a time when the ring-back sound begins to be provided.

2. The trunk management method according to claim 1, wherein the first and second predetermined period of times are set in consideration of a ring-back tone transmission time preset in the terminating mobile switching center, and a length of the ring-back sound.

3. The trunk management method according to claim 2, wherein the length of the ring-back sound is an average length of all ring-back sounds.

4. The trunk management method according to claim 1, wherein the second predetermined period of time is set to be equal to or longer than the first predetermined period of time.

5 5. A method of querying a ring-back sound in a subscriber-based ring-back sound service, in which routing from at least one intelligent peripheral to at least one intelligent peripheral server is performed to query a ring-back sound in a subscriber-based ring-back sound service process, the intelligent peripheral being constructed in such a way that a plurality of intelligent peripherals are installed according to mobile switching centers or mobile switching center groups to
10 allow one or more adjacent mobile switching centers to be directly trunk-connected to one of the intelligent peripherals according to singular routing information, and the intelligent peripheral server being constructed in such a way that ring-back sound codes corresponding to ring-back sounds stored in the intelligent peripherals are stored in the intelligent peripheral server to be preset and registered according to subscribers, and a plurality of intelligent peripheral servers are installed
15 according to phone numbers of subscriber terminals, prefix numbers thereof, prefix number groups thereof, or main working areas of the subscribers to correspond to information of the subscribers, the method comprising the steps of:

a) when a request for a trunk call connection that allows a ring-back sound preset and registered with respect to a terminating terminal to be transmitted to an originating terminal instead of a typical
20 ring-back tone according to routing information to a corresponding intelligent peripheral provided from the home location register, is received from a corresponding mobile switching center, the corresponding intelligent peripheral searching for routing information to one among the plurality of intelligent peripheral servers depending on information of the terminating subscriber provided from the trunk-connected corresponding mobile switching center; and

25 b) the corresponding intelligent peripheral performing routing to the corresponding intelligent peripheral server depending on the searched routing information and querying and obtaining a code of a corresponding ring-back sound depending on the information of the terminating subscriber.

6. The ring-back sound query method according to claim 5, wherein each of the intelligent
30 peripherals has ring-back sounds of all subscribers to correspond to the codes.

7. The ring-back sound query method according to claim 5, wherein each of the intelligent peripherals and each of the intelligent peripheral servers communicate with each other through Internet protocol.

5 8. The ring-back sound query method according to claim 5, wherein the information of the terminating subscriber is a phone number thereof.

9. A method of ascertaining a ring-back sound in a subscriber-based ring-back sound service, which allows a subscriber to ascertain his or her own ring-back sound or another subscriber's ring-back sound substituting for a typical ring-back tone using an automatic response service unit having a
10 variety of ring-back sounds as specific sounds to correspond to code information when the subscribed-based ring-back sound service for providing a terminating subscriber's desired specific sound instead of the ring back tone is implemented, the automatic response service unit performing the steps of:

15 a) obtaining information of an arbitrary second subscriber using a ring-back sound to be ascertained while communicating with a mobile terminal of a first subscriber connected to the automatic response service unit through a mobile communication network depending on a preset scenario;

20 b) requesting and obtaining code information corresponding to the second subscriber information from an intelligent peripheral server while communicating with the intelligent peripheral server having the code information to correspond to the subscriber information; and

 c) transmitting a ring-back sound provided to correspond to the obtained code information to the mobile terminal of the first subscriber.

25 10. The ring-back sound ascertainment method according to claim 9, further comprising the step of d) changing code information corresponding to the first subscriber information to code information corresponding to the second subscriber information while communicating with the intelligent peripheral server, when a request for change of the transmitted ring-back sound is received from the mobile terminal of the first subscriber depending on the scenario.

30 11. The ring-back sound ascertainment method according to claim 9 or 10, wherein the

subscriber information is a phone number of a mobile terminal of each subscriber.

12. The ring-back sound ascertainment method according to claim 9 or 10, further comprising the step of authenticating the first subscriber depending on an originating number from the mobile terminal of the first subscriber.

13. The ring-back sound ascertainment method according to claim 9, wherein the automatic response service unit and the intelligent peripheral server communicate with each other through the Internet.